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(54) Display construction

(57) A panel 40 is mounted in a surrounding frame 10 by means of magnetic elements 52,54 around the frame. The panel is held firmly without the possibility of being pivoted about a fulcrum axis by inward pressure applied to the face of the panel to one side of the fulcrum axis causing the panel at the other side of the axis to project from the frame. The panel is removable by means of a suction device 60 applied to the face of the panel. Alternatively, one of the side frames 12 could be made detachable to allow the panel to be removed sideways.

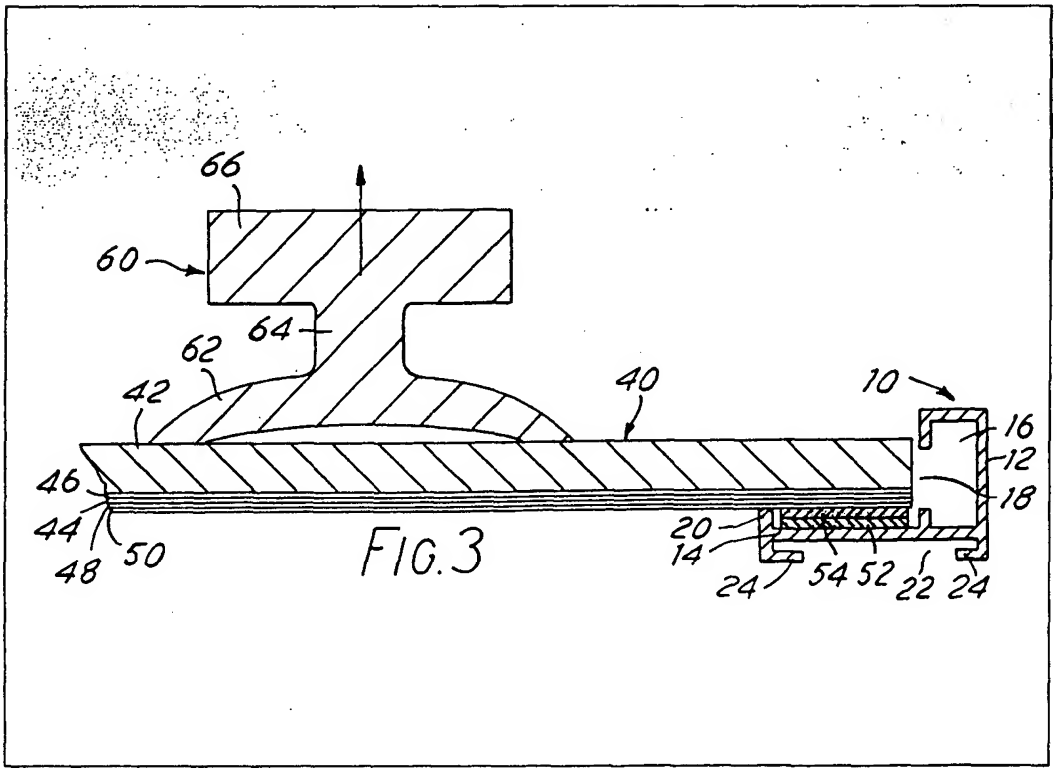

FIG.3

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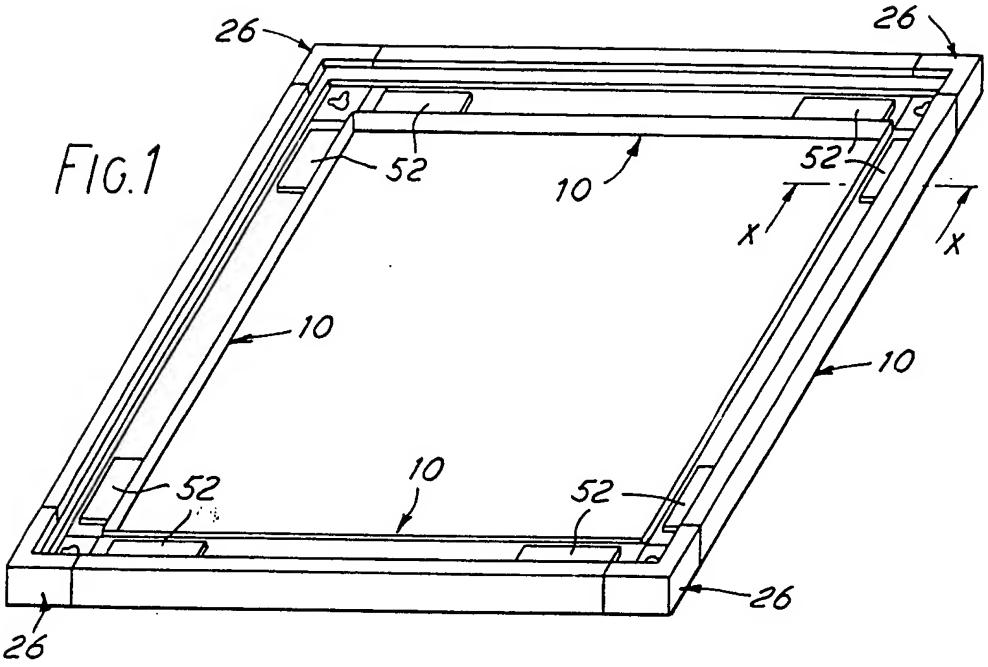

FIG.1

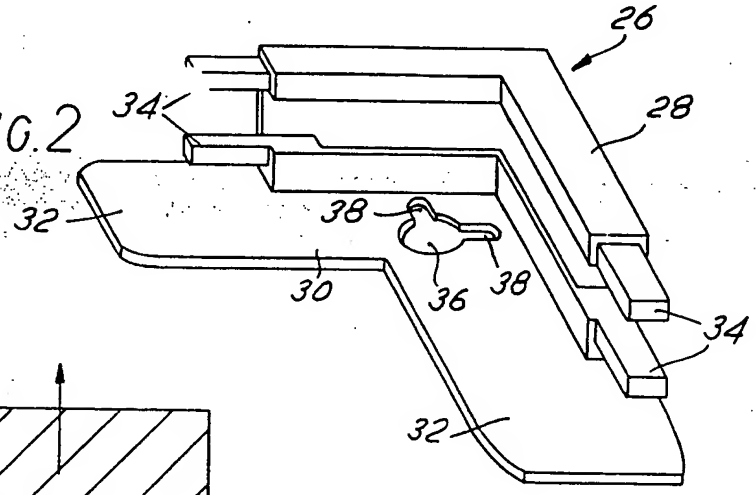

FIG.2

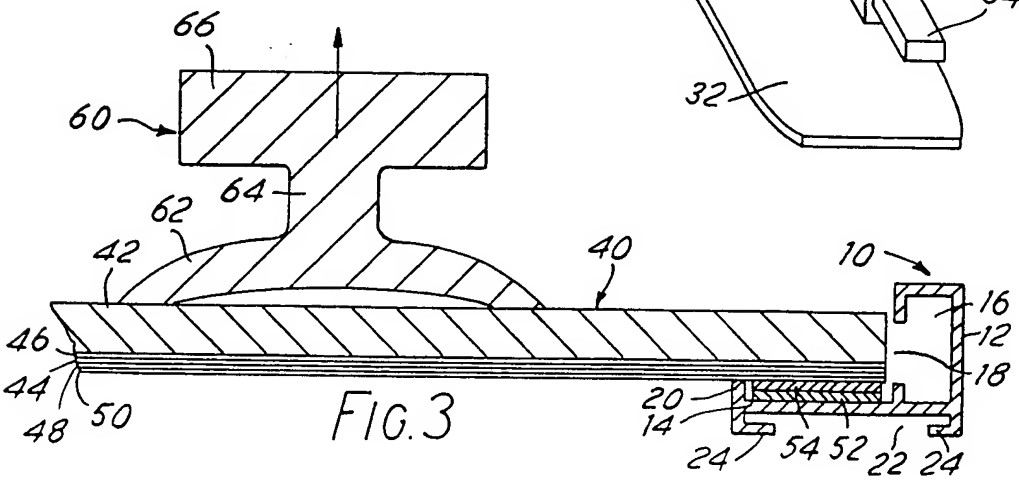

FIG.3

SPECIFICATION

Display construction

This invention relates to display constructions such as signs, pictures and the like, in which a substantially rigid display panel is mounted in a surrounding frame.

With such display constructions, it is frequently desirable for the display panel to be removable so that it can be replaced by an alternative panel, or to give access to lighting or other equipment which lies behind the panel. Removal of the panel can be effected by removing the entire display construction including both the panel and the frame, but this may be inconvenient if the frame is securely mounted. Alternatively, one of the frame members can be removed, and the panel slid out of the frame from the open side. However, this requires that there should be sufficient space at the side for the panel to be removed. It also requires the frame to have a detachable side, and moreover a side which can be detached with the panel still in place. This may be constructionally inconvenient, and in any case may involve exposed fixings for the removal of the frame member. It is therefore advantageous in many instances to have the panel removable from the front of the frame. In this way the frame members can be permanently secured together, or secured together by means which are concealed by the panel, and thus the construction presents a neater appearance, with less obvious opportunity for unauthorised interference with the construction. In order to achieve this end, it is known to secure the panel in place by magnetic means, so that the panel can be removed by forcing the co-operating magnetic elements apart. For this purpose, the panel is supported at the rear on fulcrum means which form part of the frame, and the magnetic attachment elements are provided to one side of the fulcrum axis. Thus, by pressing on the panel at the other side of the fulcrum axis the panel pivots about the fulcrum causing the magnetic elements to separate and an edge of the panel to project from the frame so that it can be grasped and the panel thus totally removed. The main disadvantages of this are that it may be difficult to secure firmly the panel when the attachment is limited to one side of the fulcrum axis, the system tends not to work for larger panels which flex when pressed, and also it is in fact very easy for unauthorised removal of the panel once the secret is known.

The present invention provides a more secure mounting for the panel which is less susceptible to unauthorised removal. It is based upon the concept of using a suction device on the face of the panel to pull the panel out of the frame. In this way, the panel can be magnetically attached to the frame on all sides and can be secure and rigid in use.

The present invention therefore provides a display construction comprising a rigid display panel mounted by magnetic means in a surrounding frame, the frame comprising side components which lie alongside the edges of the panel and effectively conceal them, and backing components which lie behind the panel, the magnetic means comprising a series of co-operating pairs of magnetic elements, one element of each pair being provided on the rear surface of the panel and the other element of the pair on a said backing component of the frame, said magnetic elements being arranged around the frame so that the panel is held firmly without the possibility of being pivoted about a fulcrum axis by inward pressure applied to the face of the panel to one side of said fulcrum axis causing the panel at the other side of the fulcrum axis to project from the frame.

The rear surface of the panel may itself be made of magnetic material, so that it constitutes one of the pair of magnetic elements. For example, the rear of the panel may be provided by steel sheet. Alternatively, the frame may be made from magnetic material such as steel. Preferably, however the co-operating magnetic elements are provided separately from the panel and frame, and are attached one to the rear of the panel and the other to the frame. Suitably, a co-operating pair of magnetic elements comprises a flexible strip of magnetised polymeric material and a co-operating strip of steel which is attracted thereto. Each of the elements may be provided with a pressure-sensitive adhesive, initially covered by a peelable protective sheet, by which adhesive the elements are secured respectively to the rear of the panel and to the frame.

In order that the invention may be more clearly understood, one embodiment will now be described with reference to the accompanying drawings, wherein:

Figure 1 shows a perspective view of a frame,

Figure 2 shows a perspective view of a corner element of the frame, and

Figure 3 shows a cross-section on the line X-X of Figure 1 with a panel in position and about to be removed.

Referring to the drawings, the frame is rectangular, and comprises four straight frame members 10, suitably formed from extruded aluminium or plastics, and having a cross-section as shown in more detail in Figure 3. This cross-section gives the frame member a side component 12 and a backing component 14. The side component 12 is of box-section, providing a channel 16 having an opening 18 along the inside wall. The backing component 14 has an upstanding ridge 20 along its inside edge and a shallow channel 22 on its rear side, the mouth of the channel being restricted by inturned lips 24.

The frame members are interconnected at the corners by corner members 26, which are shown in more detail in Figure 2. Each corner member, which is conveniently injection moulded from plastics material, comprises an L-shaped side component 28 to match the side component 12 of the frame member, and an L-shaped backing component 30 which projects at its ends to provide tongues 32 which are a push fit in the shallow channels 22 of the adjacent frame members. The side components 28 have projecting prongs 34 which are a push fit in the ends of the box sections of the side components of the adjacent frame members 10. A circular aperture 36 in the angle of the base component 30 has two narrower extensions 38 pointing at right-angles to each other towards the two limbs of the side

as to lie behind the said panel, the frame further incorporating said magnetic means comprising a series of co-operating pairs of magnetic elements, one element of each pair being secured to backing component of the frame, and the other of said pair being magnetically held to said one element and having on a surface remote from said one element a pressure-sensitive adhesive covered by a peelable protective sheet, by which adhesive said other elements can be secured to the rear of a said panel, said magnetic elements being arranged around the frame so that the panel will be held firmly without the possibility of being pivoted about a fulcrum axis by inward pressure applied to the face of the panel to one side of said fulcrum axis causing the panel at the other side of the fulcrum axis to project from the frame.

9. A display construction according to claim 1 or a frame according to claim 8, substantially as described herein with reference to the drawings.

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